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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Inventors: Eiko SEIDEL, et al.

Appln. No.: 10/567,825

Filed: February 10, 2006

For: TIME MONITORING OF PACKET RETRANSMISSIONS DURING  
SOFT HANDOVER

PETITION TO MAKE SPECIAL

Assistant Commissioner of Patents  
Washington, DC 20231

Sir:

The Applicants respectfully petition that the above-captioned application be granted special status. The requirements of MPEP section 708.02(VIII) are complied with as follows:

(1) Please charge the petition fee set forth in 37 CFR 1.17(i) to Deposit Account No. 19-4375.

(2) All pending claims (new claims 40-80 presented in a Preliminary Amendment filed concurrently herewith) of the present application are believed to be directed to a single invention; if the Office determines that all the claims presented are not obviously directed to a single invention, the Applicants agree to make an election without traverse as a prerequisite to the grant of special status.

(3) A pre-examination search has been made, and an Information Disclosure Statement directed thereto is attached. The field of search is:

Class 370, subclasses 230, 231 and 235/331,349,394;

Class 455, subclasses 436, 439, 442, 443; and

Class 714, subclasses 746, 748, 749, 758, 750, 751 and 752.

Examiners Albert DeCady, Tilahun Gesesse, Jean Gelin and Ahmad Matar were consulted for the field of search.

In addition, a European Search Report and an International Search Report were issued in counterpart applications, and an Information Disclosure Statement directed to the art cited therein was filed on February 8, 2006.

(4) One copy each of the prior art deemed most closely related to the subject matter encompassed by the claims is of record in the form of the art cited in the Information Disclosure Statement filed February 8, 2006 and the Information Disclosure Statement submitted herewith.

(5) The following provides a detailed discussion of the art of record, and sets forth comments pointing out how the instant claimed subject matter is patentably distinguishable over the references of record, considered alone or in combination.

#### A. Discussion of All References of Record

3GPP TR 25.401, "UTRAN Overall Description," discussed at page 2, line 30 et seq. of the present application, discloses in Fig. 1 the high level R99/4/5 architecture of Universal Mobile Telecommunication System (UMTS).

The documents 3GPP TSG RAN WG3, "Feasibility Study on the Evolution of the UTRAN Architecture," 3GPP TSG RAN WG3, meeting #36, "Proposed Architecture on UTRAN Evolution," Tdoc R3-030678, and 3GPP TSG RAN WG3, meeting #36, "Further Clarifications on the Presented Evolved Architecture," Tdoc R3-030688, discussed at page 3, line 20 et seq. of the present application, provide a feasibility study for UTRAN architecture evolution from the current R99/4/5 UMTS architecture.

3GPP TR 25.896, "Feasibility Study for Enhanced Uplink for UTRA FDD (Release 6), discussed at page 5, line 6 et seq of the present application, discloses uplink enhancements for Dedicated Transport Channels (DTCH).

3GPP TSG RAN WG1, meeting#31, "HARQ Structure," Tdoc R1-030247, discussed at page 6, line 8 et seq. of the present application, in Fig. 5, shows the exemplary overall E-DCH MAC architecture on the user equipment side, with a new MAC functional entity (see Fig. 6) added to the MAC architecture of R99/4/5.

3GPP TS 25.133, "Requirements for Support of Radio Resource Management (FDD)", discussed at page 8, line 24 et seq. of the present application, describes reporting of pilot signal measurements to the network from the user equipment via RRC signaling, with filtering to average the fast fading, leading to handover delay.

3GPP TS 25.331, "Radio Resource Control (RRC) Protocol Specification", discussed at page 10, line 184 et seq. of the present application, states that before starting of any transmission, the radio bearer may be established and all layers should be configured accordingly.

WO 02 37872 to Ghosh et al. (cited under Category X in the European Search Report) discloses a soft-handover, hybrid ARQ scheme. In this scheme, after receiving a frame from a mobile station, plural base stations process the frame and communicate to the mobile station over a forward control channel either an ACK signal or a NACK signal indicating whether the frame contained any errors. The scheme deals with the following cases. First, if all base stations communicate that the frame contains errors, the mobile station retransmits the same frame to all base stations with a flush bit set to instruct the base stations to combine the retransmitted frame with the original frame; the retransmission of the unsuccessful frame and combining of the unsuccessful frames

will continue until at least one of the base stations decodes a frame successfully or until a preset timeout period is reached (see page 9, lines 8-13). Secondly, if only some base stations communicate that the frame contains errors, the mobile station sets the flush bit to instruct the base stations not to combine the stored frame with the next frame and to clear the stored frame from memory (see page 9, lines 19-21 and page 10, lines 10-15). Thirdly, if all base stations communicate that the frame contains no errors, the mobile station sets the flush bit to instruct the base stations not to combine the stored frame with the next frame and to clear the stored frame from memory (see page 8, lines 15-26).

US 2002/019965 (issued as USPN 6,557,134 on April 29, 2003) to Bims et al. (cited under Category A in the European Search Report) discloses forward and reverse channel ARQ communication in which a forward channel ARQ session between a first unit and a second unit is performed. A command is sent to the second unit to start a forward channel ARQ session. This command includes a message length field specifying the length of an ARQ message to be sent by the first unit to the second unit. The second unit may refuse the command because of the length of the ARQ message, if, for example, available space in a memory of the second unit is not large enough to store the ARQ message. The first unit may resend

the command within a predetermined time limit in response to receiving a request for the first unit to resend the command, or the second unit may unilaterally terminate the ARQ session if the first unit does not resend the command within the predetermined time limit.

US 2004/0116143 discloses a communication system which allows time and signal-to-noise ratio-based HARQ flush functions at base stations during soft handover. In this system, a base station flushes an ARQ buffer upon expiration of a timer that measures an expiration of a predetermined period of time after receiving a first transmission of a sub-frame in error, or the base station may flush the ARQ buffer when the base station determines that the buffer has been corrupted due to received data with unacceptably low received SNR.

USPN 6850769 states in its Summary section: "The processor starts an abort timer associated with a transmitted negative acknowledgment for measuring an elapsed time from the time when the request for the re-transmission is sent. The abort timer determines whether the elapsed time of the abort timer exceeds an abort period of time dynamic threshold, and passes, to a protocol layer above the RLP, the received in-sequence RLP packets of data without waiting for receiving the retransmission of the missing RLP packets of data when the abort timer exceeds the abort period of

time dynamic threshold. The processor is configured for determining the abort timer dynamic threshold based on statistical data obtained from measuring the periods of time between the time that the request for re-transmission is sent and the time that the requested re-transmission is received. The processor is configured for recording and accumulating data associated with a period of time for completing each successful retransmission of RLP packets for a number of retransmission processes and determining the statistical data based on the accumulated data of the period of times." Thus, this patent discloses a communication system which (1) starts an abort timer associated with a transmitted NACK for measuring an elapsed time of the abort timer from the time when the request for a re-transmission is sent, and (2) determines whether the elapsed time of the abort timer exceeds an abort period of a time dynamic threshold that is based on statistical data of periods of time measured for previously received successful retransmissions of packet data. The abort period is adaptively computed in accordance with a protocol by specifying a first abort period during which retransmission of a frame must occur, measuring a retransmission period for successful retransmission of a frame each time a frame is retransmitted, using the retransmission period to compute a running mean and a mean deviation for recent

retransmission periods, and setting a second RLP abort period based on the running mean and the mean deviation.

**B. Discussion of How the Claimed Invention Patentably Distinguishes over the References of Record**

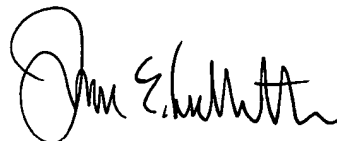
The references discussed above, considered either alone or in combination, fail to disclose or suggest at least the claimed subject matter of independent claims 40 and 72 which recite that, during a soft handover, one or more base stations receive data from a communications terminal, and the one or more base stations store the data in a soft buffer and decode the data. The one or more base stations is/are operable to use a time elapsed since storing the received data in the soft buffer in order to flush the soft buffer. In contrast to the above-discussed claimed subject matter, it is noted that, for example, in US 2004/0116143, the timer measures an expiration of a predetermined period of time after receiving a first transmission of a sub-frame in error, and in USPN 6850769, the abort timer measures an elapsed time from the time when a request for a re-transmission is sent. None of the other references of record discloses or suggests one or more base stations operable to use a time elapsed since storing the received data in the soft buffer in order to flush the soft buffer and thus do not cure the deficiencies of US 2004/0116143 and USPN 6850769.



Accordingly, in light of the foregoing discussion pointing out how the claimed invention distinguishes over the cited references, the Applicants respectfully submit that the inventions of all the presently pending claims are not anticipated by these references and would not have been obvious over any combination of the teachings thereof.

Grant of special status in accordance with this petition is respectfully requested.

Respectfully submitted,



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